Class of emission	Emission designator	Authorized bandwidth (kHz)
H3N	2K66H3N	2.8
J2A	160HJ2A	0.4
J2B[4]	280HJ2B	0.3
J2B[5]	300HJ2B	0.5
J2B	2K80J2B	3.0
J2C	2K80J2C	3.0
J2D[14]	2K80J2D	3.0
J3C	2K80J3C	3.0
J3E[11]	2K80J3E	3.0
J3N	160HJ3N	0.4
NON	NON	0.4
PON	([12])	([12])
R3E[11]	2K80R3E	3.0

[1] On 500 kHz and 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.
[2] Applicable only to transmissions in the 405–525 kHz band for direction finding.
[3] Applicable only to EPIRB's.
[4] Radioprinter transmissions for communications with private coast stations.
[5] NB–DP radiotelegraph and data transmissions for communications with public coast stations.
[6] Applicable only to radioprinter and data in the 156–162 MHz band and radioprinter in the 216–220 MHz band.
[7] Applicable only to facsimile in the 156–162 MHz and 216–220 MHz bands.
[8] Applicable only when maximum frequency deviation is 5 kHz. See also paragraph (b) of this section.
[9] Applicable only to marine hand-held radar.
[10] Applicable only to on-board frequencies for maneuvering or navigation.
[11] Transmitters approved prior to December 31, 1969, for emission H3E, J3E and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.
[12] Applicable to radiolocation and associated telecommand ship stations operating on 154.585 MHz, 159.480 MHz, 160.725 MHz. 160.785 MHz, 454.000 MHz, and 459.000 MHz; emergency position indicating radiobeacons operating in the 406.000–406.1000 MHz frequency bank; and data transmissions in the 156–162 MHz band.
[13] Class C EPIRB stations may not be used after February 1, 1999.
[14] The information is contained in multiple very low level subcarriers.

(b) For land stations the maximum authorized frequency deviation for F3E or G3E emission is as follows:

(1) 5 kHz in the 72.0–73.0 MHz, 75.4–76.0 MHz and 156–162 MHz bands;

(2) 15 kHz for stations which were authorized for operation before December 1, 1961, in the 73.0–74.6 MHz band.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7418, Mar. 11, 1987; 53 FR 37308, Sept. 26, 1988; 56 FR 11516, Mar. 19, 1991; 57 FR 43407, Sept. 21, 1992; 58 FR 33344, June 17, 1993; 59 FR 7714, Feb. 16, 1994; 62 FR 40305, July 28, 1997; 63 FR 36606, July 7, 1998; 68 FR 46962, Aug. 7, 2003]

§ 80.207 Classes of emission.

(a) Authorization to use radiotelephone and radiotelegraph emissions by ship and coast stations includes the use of digital selective calling and selective calling techniques in accordance with § 80.225.

(b) In radiotelegraphy communications employing a modulated carrier the carrier must be keyed and modulated by an audio frequency.

(c) Authorization to use single sideband emission is limited to emitting a carrier;

(1) For full carrier transmitters at a power level between 3 and 6 dB below peak envelope power;

(2) For suppressed carrier transmitters at a power level at least 40 dB below peak envelope power; and

(3) For reduced or variable level carrier:

(i) In the 1600–4000 kHz band:

(A) For coast station transmitters 18±2 dB below peak envelope power;

(B) For ship station transmitters installed before January 2, 1982, 16±2 dB below peak envelope power; and

(C) For ship station transmitters installed after January 1, 1982, 18±2 dB below peak envelope power.

(ii) In the 4000–27500 kHz band:

(A) For coast station transmitters 18±2 dB below peak envelope power;

(B) For ship station transmitters installed before January 2, 1978, 16±2 dB below peak envelope power; and

(C) For ship station transmitters installed after January 1, 1978, 18±2 dB below peak envelope power.

(d) The authorized classes of emission are as follows:

Types of stations	Classes of emission
Ship Stations[1]	
Radiotelegraphy:	
100–160 kHz	A1A.
405–525 kHz	A1A, J2A.
1605–27500 kHz:	
Manual[15 16 17]	A1A, J2A, J2B, J2D.
DSC[16]	F1B, J2B.
NB–DP[14 16]	F1B, J2B, J2D.
Facsimile	F1C, F3C, J2C, J3C.

Types of stations	Classes of emission
1561–162 MHz [2]	F1B, F2B, F2C, F3C, F1D, F2D.
DSC	G2B.
216–220 MHz [3]	F1B, F2B, F2C, F3C, F1D, F2D.
1626.5–1646.5 MHz	([4])
Radiotelephony:	
1605–27500 kHz [5 16]	H3E, J2D, J3E, R3E.
27.5–470 MHz [6]	G3D, G3E.
1626.5–1646.5 MHz	([4])
Radiodetermination:	
285–325 kHz [7]	A1A, A2A.
405–525 kHz (Direction Finding) [8]	A3N, H3N, J3N, N0N.
154–159 MHz: [12]	A1D, A2D, F1D, F2D, G1D, G2D.
2.4–9.5 GHz	P0N.
14.00–14.05 ghZ	F3N.
Land Stations [1]	
Radiotelegraphy:	
100–160 kHz	A1A.
405–525 kHz	A1A, J2A.
1605–2805 kHz:	
Manual	A1A, J2A.
Facsimile	F1C, F3C, J2C, J3C.
Alaska-Fixed	A1A, J2A.
4000–27500 kHz:	
Manual [16]	A1A, J2A, J2B, J2D.
DSC [18]	F1B, J2B.
NB–DP [14 18]	F1B, J2B, J2D.
Facsimile	F1C, F3C, J2C, J3C.
Alaska—Fixed [17 18]	A1A, A2A, F1B, F2B, J2B, J2D.
72–76 MHz	A1A, A2A, F1B, F2B.
156–162 MHz [2]	F1B, F2B, F2C, F3C, F1D, F2D.
DSC	G2B.
216–220 MHz [3]	F1B, F2B, F2C, F3C, F1D, F2D.
Radiotelephony:	
1605–27500 kHz [18 19]	H3E, J2D, J3E, R3E.
72–76 MHz	A3E, F3E, G3E.
156–740 MHz	G3E.
Radiodetermination:	
2.4–9.6 GHz	P0N.
Distress, Urgency and Safety [8 9]	
2182 kHz [10 11]	A2B, A3B, H2B, H3E, J2B, J3E.
121.500 MHz	A3E, A3X, N0N.
123.100 MHz	A3E.
156.750 and 156.800 MHz [13]	G3E, G3N.
243.000 MHz	A3E, A3X, N0N.
406–406.1 MHz	G1D.

[1] Excludes distress, EPIRBs, survival craft, and automatic link establishment.

[2] Frequencies used for public correspondence and in Alaska 156.425 MHz. See §§ 80.371(c), 80.373(f) and 80.385(b). Transmitters approved before January 1, 1994, for G3E emissions will be authorized indefinitely for F2C, F3C, F1D and F2D emissions. Transmitters approved on or after January 1, 1994, will be authorized for F2C, F3C, F1D or F2D emissions only if they are approved specifically for each emission designator.

[3] Frequencies used in the Automated Maritime Telecommunications System (AMTS). See §80.385(b).

[4] Types of emission are determined by the INMARSAT Organization.

[5] Transmitters type accepted prior to December 31, 1969, for emission H3E, J3E, and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.

[6] G3D emission must be used only by one-board stations for maneuvering or navigation.

[7] Frequencies used for cable repair operations. See §80.375(b).

[8] For direction finding requirements see § 80.375.

[9] Includes distress emissions used by ship, coast, EPIRBs and survival craft stations.

[10] On 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.

[11] Ships on domestic voyages must use J3E emission only.

[12] For frequencies 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz, authorized for offshore radiolocation and related telecommand operations.

[13] Class C EPIRB stations may not be used after February 1, 1999.

[14] NB–DP operations which are not in accordance with ITU–R Recommendation M.625–3, "Direct-Printing Telegraph Equipment Employing Automatic Identification in the Maritime Mobile Service," with Annex, 1995, or ITU–R Recommendation M.476–5, "Direct-Printing Telegraph Equipment in the Maritime Mobile Service," with Annex, 1995, are permitted to utilize any modulation, so long as emissions are within the limits set forth in § 80.211(f) of this chapter. ITU–R Recommendations M.476–5 and M.625–3 with Annexes are incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of these standards can be inspected at the Federal Communications Commission, 445 12th Street, SW, Washington, DC (Reference Information Center) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.* The ITU–R Recommendations can be purchased from the International Telecommunication Union (ITU), Place des Nations, CH–1211 Geneva 20, Switzerland.

[15] J2B is permitted only on 2000–27500 kHz.

[16] J2D is permitted only on 2000–27500 kHz, and ship stations employing J2D emissions shall at no time use a peak envelope power in excess of 1.5 kW per channel.

[17] J2B and J2D are permitted provided they do not cause harmful interference to A1A.

[18] Coast stations employing J2D emissions shall at no time use a peak envelope power in excess of 10 kW per channel.
[19] J2D is permitted only on 2000–27500 kHz.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; as amended at 52 FR 7418, Mar. 11, 1987; 52 FR 35244, Sept. 18, 1987; 53 FR 8905, Mar. 18, 1988; 53 FR 37308, Sept. 26, 1988; 54 FR 40058, Sept. 29, 1989; 54 FR 49993, Dec. 4, 1989; 56 FR 11516, Mar. 19, 1991; 57 FR 43407, Sept. 21, 1992; 58 FR 33344, June 17, 1993; 62 FR 40305, July 28, 1997; 63 FR 36606, July 7, 1998; 67 FR 48564, July 25, 2002; 68 FR 46963, Aug. 7, 2003]

§ 80.209 Transmitter frequency tolerances.

(a) The frequency tolerance requirements applicable to transmitters in the maritime services are shown in the following table. Tolerances are given as parts in 10^6 unless shown in Hz.

Frequency bands and categories of stations	Tolerances [1]
(1) Band 100–525 kHz:	
(i) Coast stations:	
For single sideband emissions	20 Hz.
For transmitters with narrow-band direct printing and data emissions	10 Hz [2]
For transmitters with digital selective calling emissions	10 Hz.
For all other emissions	100.
(ii) Ship stations:	
For transmitters with narrow-band direct printing and data emissions	20 Hz.
For transmitters with digital selective calling emissions	10 Hz [2]
For all other transmitters	10 Hz.
(iii) Ship stations for emergency only:	
For all emissions	20 Hz.
(iv) Survival craft stations:	
For all emissions	20 Hz.
(v) Radiodetermination stations:	
For all emissions	100.
(2) Band 1600–4000 kHz:	
(i) Coast stations and Alaska fixed stations:	
For single sideband and facsimile	20 Hz.
For narrow-band direct printing and data emissions	10 Hz.[2]
For transmitters with digital selective calling emissions	10 Hz.[2]
For all other emissions	50 Hz.
(ii) Ship stations:	
For transmitters with narrow-band direct printing and data emissions	10 Hz.[2]
For transmitters with digital selective calling emissions	10 Hz.[3]
For all other transmitters	20 Hz.
(iii) Survival craft stations:	20 Hz.
(iv) Radiodetermination stations:	
With power 200W or less	20.
With power above 200W	10.
(3) Band 4000–27500 kHz:	
(i) Coast stations and Alaska fixed stations:	
For single sideband and facsimile emissions	20 Hz.
For narrow-band direct printing and data emissions	10 Hz.[2]
For digital selective calling emissions	10 Hz.
For Morse telegraphy emissions	10.
For all other emissions	15 Hz.
(ii) Ship stations:	
For transmitters with narrow-band direct printing and data emissions	10 Hz.[2]
For transmitters with digital selective calling emissions	10 Hz.[3]
For all other transmitters	20 Hz.
(iii) Survival craft stations:	50 Hz.
(4) Band 72–76 MHz:	
(i) Fixed stations:	
Operating in the 72.0–73.0 and 75.4–76.0 MHz bands	5.
Operating in the 73.74.6 MHz band	50.
(5) Band 156–162 MHz:	
(i) Coast stations:	
For carriers licensed to operate with a carrier power:	
Below 3 watts	10.
3 to 100 watts	5.[7]
(ii) Ship stations	10.[4]
(iii) Survival craft stations operating on 121.500 MHz	50.
(iv) EPIRBs:	
Operating on 121.500 and 243.000 MHz	50.
Operating on 156.750 and 156.800 MHz.[6]	10.
(6) Band 216–220 MHz:	